

REMARKS

Claims 1-23 are pending in the application. Claims 1-23 are rejected.

Base Claims 1, 8, 15 and 22 are now amended to further emphasize and make clear the present invention in light of the Examiner's comments in the Office Action at hand. No new matter is introduced. Acceptance is respectfully requested

Regarding Rejections under 35 U.S.C. § 103(a)

Claims 1-23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Balakrishnan (U.S. Patent 6,233,559) in view of Grant *et al.* (U.S. Patent 6,208,972).

The present invention relates to a method and apparatus for determining which speech-enabled application should receive a spoken utterance in a multi-context speech enabled environment. The invention apparatus in one embodiment includes a context manager and a message handler. The context manager evaluates contexts for speech enabled applications based upon an access characteristic. The message handler receives a representation of a spoken utterance. The context manager receives the representation of the spoken utterance from the message handler and directs the representation of the spoken utterance to a selected speech enabled application based upon the evaluation of the contexts. The context manager, prior to evaluating the contexts, may create the contexts for the speech enabled applications in the speech enabled environment. (See Specification, page 3, line 26 to page 4, line 6.) The speech enabled applications do not have to be running (i.e., currently performing on a computer system) in order for the context manager to evaluate the contexts based upon the access characteristic. For example, the user utters a request to take a letter, and a word processing application starts up (i.e., is launched by the invention system) if it is not already running. (See Specification, page 3, lines 17-20.)

In another example of the present invention, a user utters a phrase such as "print the first message" or "print the first appointment," the context manager readily figures out the intended target application (an email application versus a calendar application) for the uttered sentence. If the utterance is "print it" however, both applications are capable of accepting the utterance. The context manager therefore has to make a choice by referring to the context list of applications in

order of recency of access (i.e., an access characteristic). The context manager tests the utterance against these contexts (indicated by the contexts in the context list) in priority order, and passes the commands on to the first application that has a grammar (context) that will accept the phrase. (See Specification, page 13, line 13 to page 14, line 3.) Even if the chosen application is not running, the application will be launched.

Accordingly, key to the present invention is the “evaluating the plurality of contexts for speech enabled applications and prioritizing these contexts based upon an access characteristic” (emphasis added). Such is recited in base claims **1, 8, 15 and 22**.

The Balakrishnan patent is capable of launching an unopened application (col. 7, lines 3-4; col. 7, lines 15-17) as well as arbitrating between two unopened applications (col. 7, lines 15-17). However, the Balakrishnan patent is unable to apply a context-dependent arbitration process to unopened applications because it is unable to distinguish between two applications which have no focus characteristic. Balakrishnan applies context-dependent arbitration to only sets of applications having no more than one out-of-focus (or unopened) application.

For example, consider a situation in which a computer is enabled, but no applications are running. The user says aloud “Open the last file I edited.” Because no window is in-focus, the context-dependent arbitration process of the Balakrishnan patent fails. In contrast, the present invention will successfully launch the most recently accessed application because it maintains a dynamic list based on recency of relevant access .

The Grant patent does have the ability to launch applications (col. 8, lines 45-51; col. 9 lines 18-46); however, as discussed above the patent does not offer application launch functionality that is not already incorporated in the Balakrishnan patent. In addition, the Grant patent does not imply, suggest, or disclose any means of applying context-dependent arbitration to unopened applications. Therefore, combining the teachings of Grant and Balakrishnan would not suggest the ability to “evaluat[e] a plurality of contexts for speech enabled applications and prioritize these contexts based upon an access characteristic, said evaluating being applied to speech enabled applications whether the applications is running or not” as in the claimed invention.

Similarly, through the recency of access characteristic the present invention can resolve conflicts between multiple applications which are running, but out-of-focus. Consider a situation

in which three applications are open: a calendar program without print functionality which is the in-focus application, a word processing program which was used immediately before the calendar program, and an e-mail application which has not been used recently but remains running in the background. The user says aloud, "Print it." Because the calendar application has no print functionality, the speech can only be applied to the grammars of the word processing and e-mail applications. The Balakrishnan patent fails to choose the word processing application because it is unable to apply a context-dependent arbitration process to two or more out-of-focus applications. Again, the present invention successfully directs the command to the intended application because it maintains a dynamic list based on an access characteristic, namely recency of relevant access.

These examples highlight a fundamental distinction between evaluating and prioritizing contexts using an access characteristic and context-dependent arbitration: the ability to resolve context conflicts when more than one application is not currently in-focus. Thus, Balakrishnan does not imply, suggest or otherwise disclose the claimed "*evaluating a plurality of contexts for speech enabled applications and prioritizing these contexts based upon an access characteristic*". As such, the present invention as claimed in base claims 1, 8, 15 and 22 is novel and non-obvious over Balakrishnan and Grant. Claims 2-7 are dependant on Claim 1, Claims 9-14 are dependant on Claim 8, Claims 16-21 are dependant on Claim 15, and Claim 23 is dependant on Claim 22. Thus, for at least the same reasons, dependent Claims 2-7, 9-14, 16- 21 and 23 should be allowable over the cited art.

Also key to the present invention is "identifying each context based on a persistent grammar, a foreground grammar, or a background grammar for each speech enabled application." Such is recited in dependent claims **3, 10, and 17**.

The Balakrishnan patent does not imply, suggest, or disclose maintaining multiple distinct grammars for each application. The functions start, open, and quit may be applied to either an in-focus or out-of-focus application. A "... key set of commands ("start", "open", "quit") will be directed by arbitrator 70 to an out-of-focus application more readily ... if accompanied by a high confidence level indicator (e.g., 'Netscape' or 'WisdomPen') ..." (col. 4, lines 61-70; emphasis added). This passage indicates that the relevancy of a command to an application is affected by an accompanying application name, not by the focus state of the

application. Similarly, edit is a valid command independent of focus, and is used in the Balakrishnan patent as an example of a command that is more relevant to one application in its entirety, rather than based on the state of that application (col. 4, lines 45-47).

As designed, the Balakrishnan patent is unable to exchange grammars because speech recognition occurs prior to arbitration (see col. 4 lines 29-37). The speech recognition component has no access to the focus state of an application. It is only during the arbitration process that the focus of the application is considered (see col. 4, lines 52-58). Therefore, the design of the Balakrishnan patent will not permit the substitution of grammars for a single application.

Consequently, the § 103 rejection of Claims 1-23 in view of Balakrishnan and Grant are believed to be overcome. Acceptance is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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Dated: 6/14/05